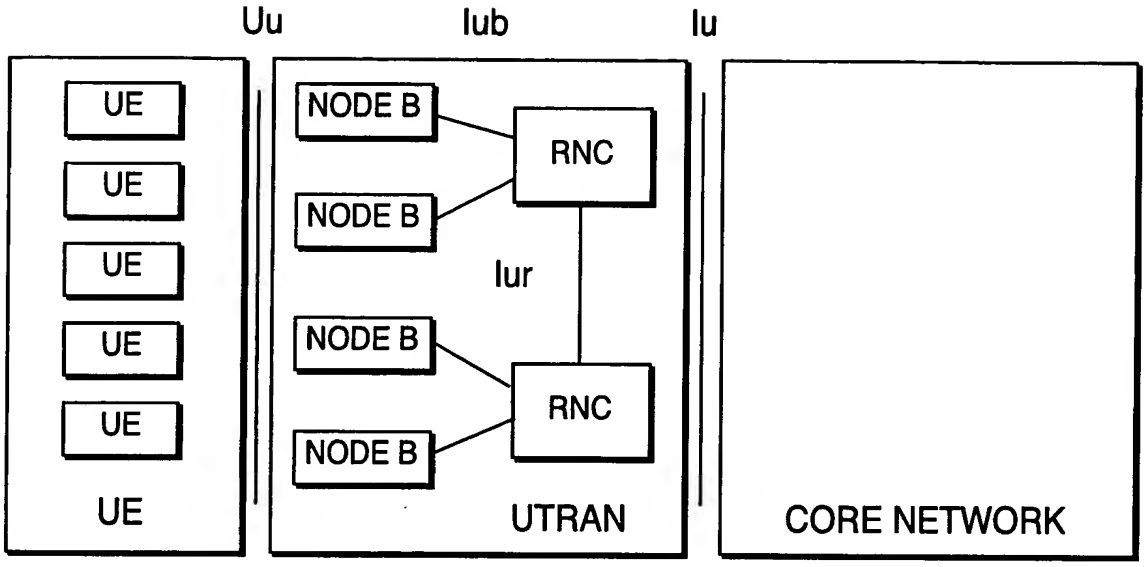


FIG. 1A
PRIOR ART

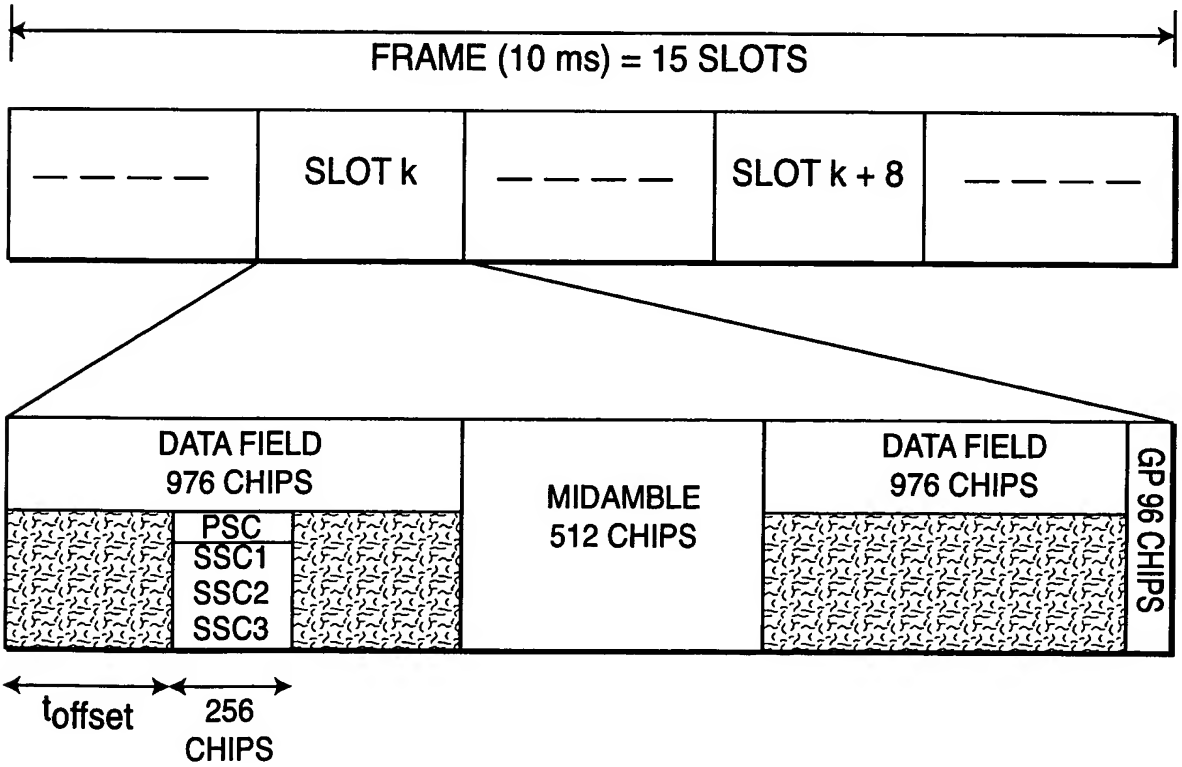


FIG. 1B
PRIOR ART

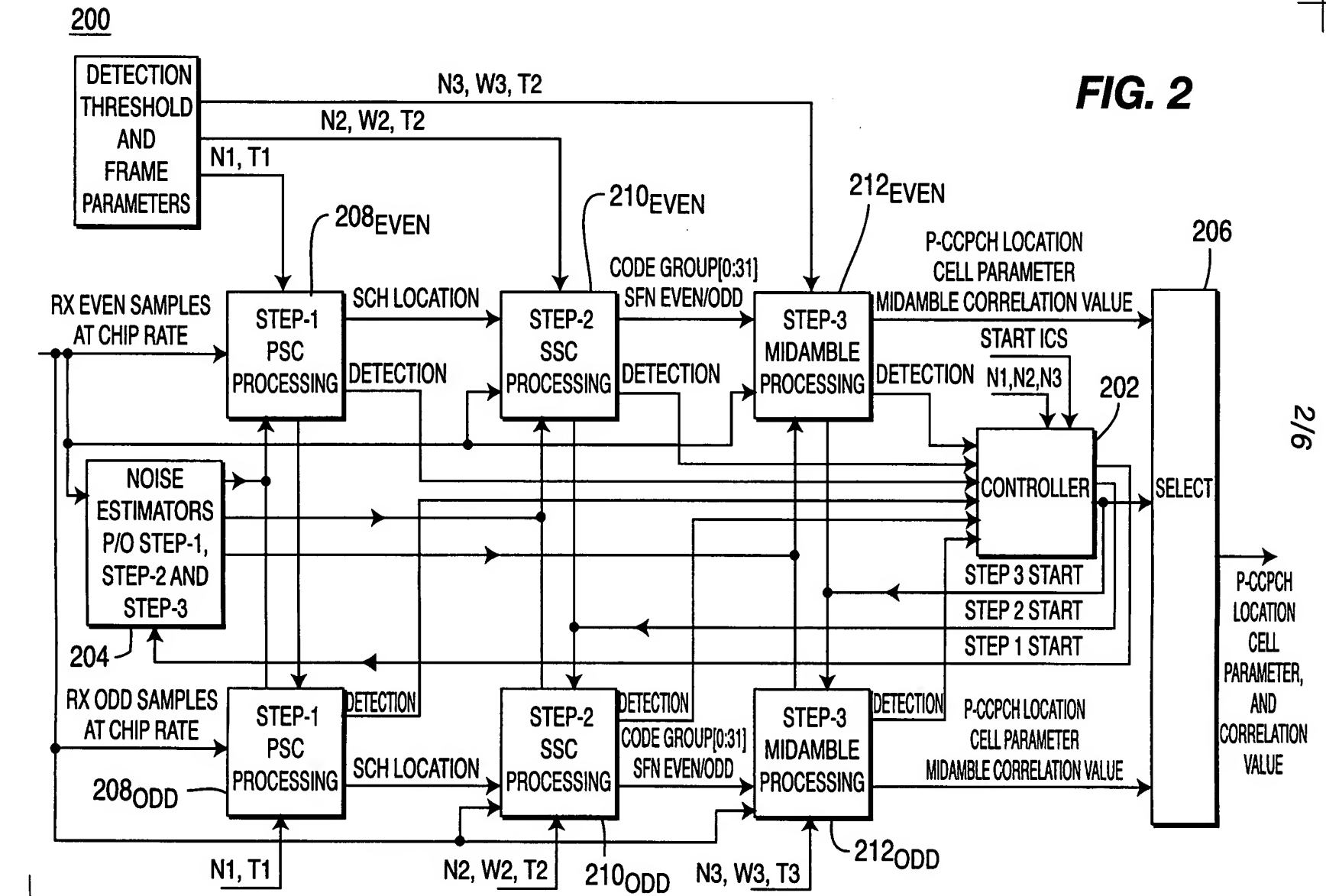

200
DETECTION THRESHOLD AND FRAME PARAMETERS
N3, W3, T2
N2, W2, T2
N1, T1
208EVEN
210EVEN
212EVEN
206
RX EVEN SAMPLES AT CHIP RATE
STEP-1 PSC PROCESSING
SCH LOCATION
DETECTION
STEP-2 SSC PROCESSING
CODE GROUP[0:31] SFN EVEN/ODD
DETECTION
STEP-3 MIDAMBLE PROCESSING
DETECTION
P-CCPCH LOCATION CELL PARAMETER MIDAMBLE CORRELATION VALUE
START ICS
N1,N2,N3
202
CONTROLLER
SELECT
NOISE ESTIMATORS P/O STEP-1, STEP-2 AND STEP-3
204
STEP 3 START
STEP 2 START
STEP 1 START
RX ODD SAMPLES AT CHIP RATE
208ODD
STEP-1 PSC PROCESSING
DETECTION
SCH LOCATION
STEP-2 SSC PROCESSING
DETECTION
CODE GROUP[0:31] SFN EVEN/ODD
STEP-3 MIDAMBLE PROCESSING
DETECTION
P-CCPCH LOCATION CELL PARAMETER MIDAMBLE CORRELATION VALUE
P-CCPCH LOCATION CELL PARAMETER, AND CORRELATION VALUE
N1, T1
N2, W2, T2
210ODD
N3, W3, T3
212ODD

FIG. 2

FIG. 3

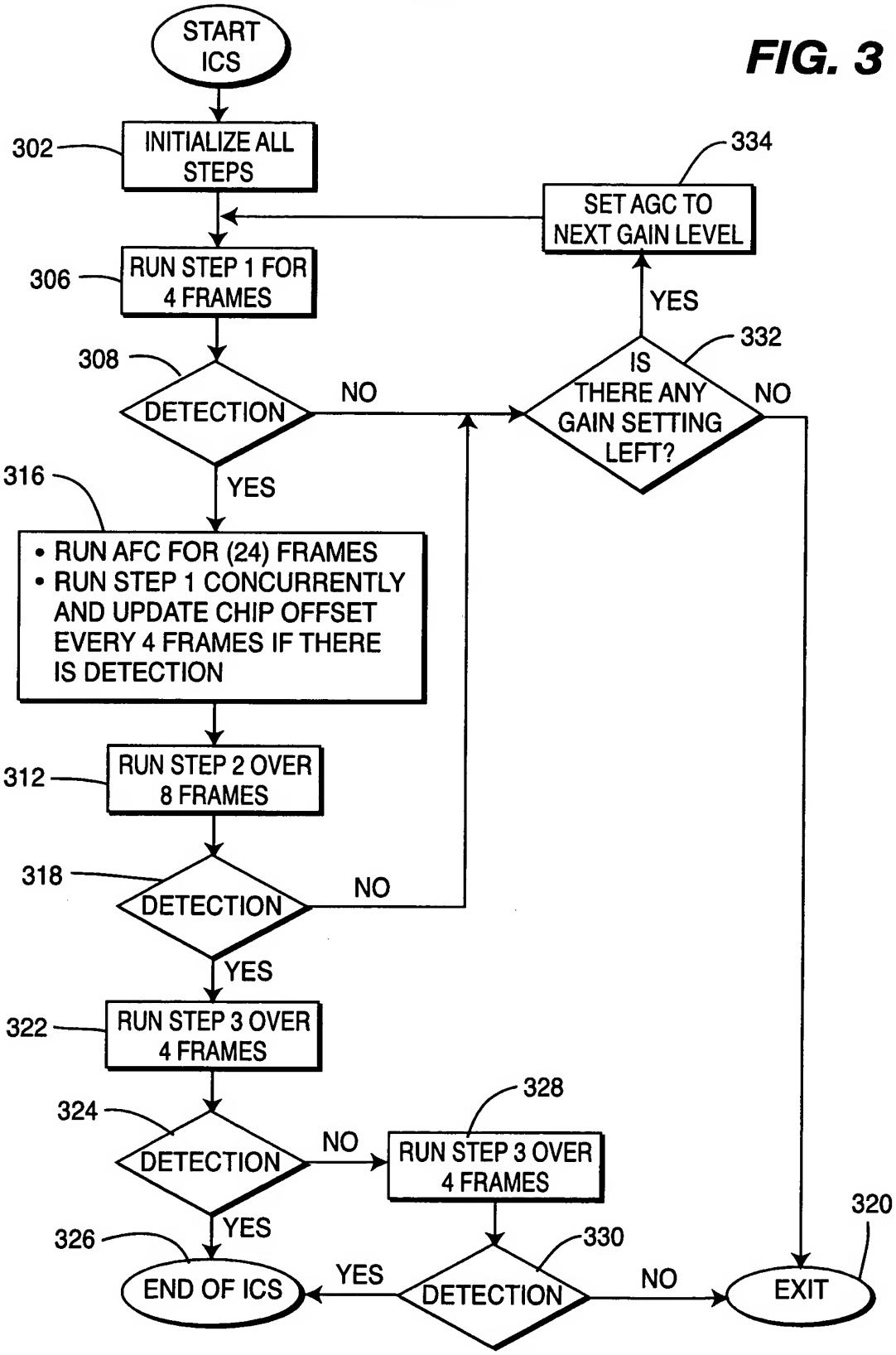
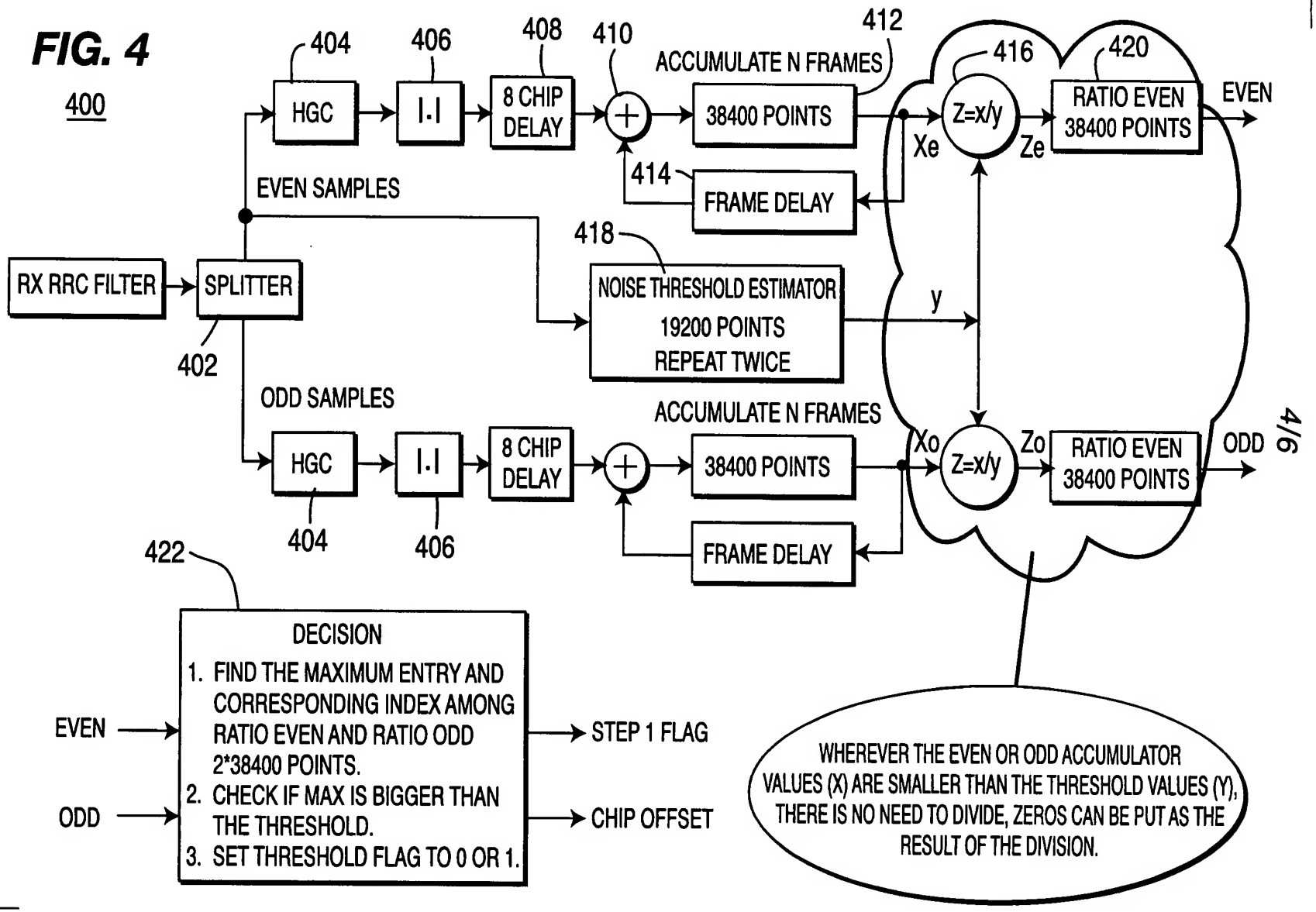
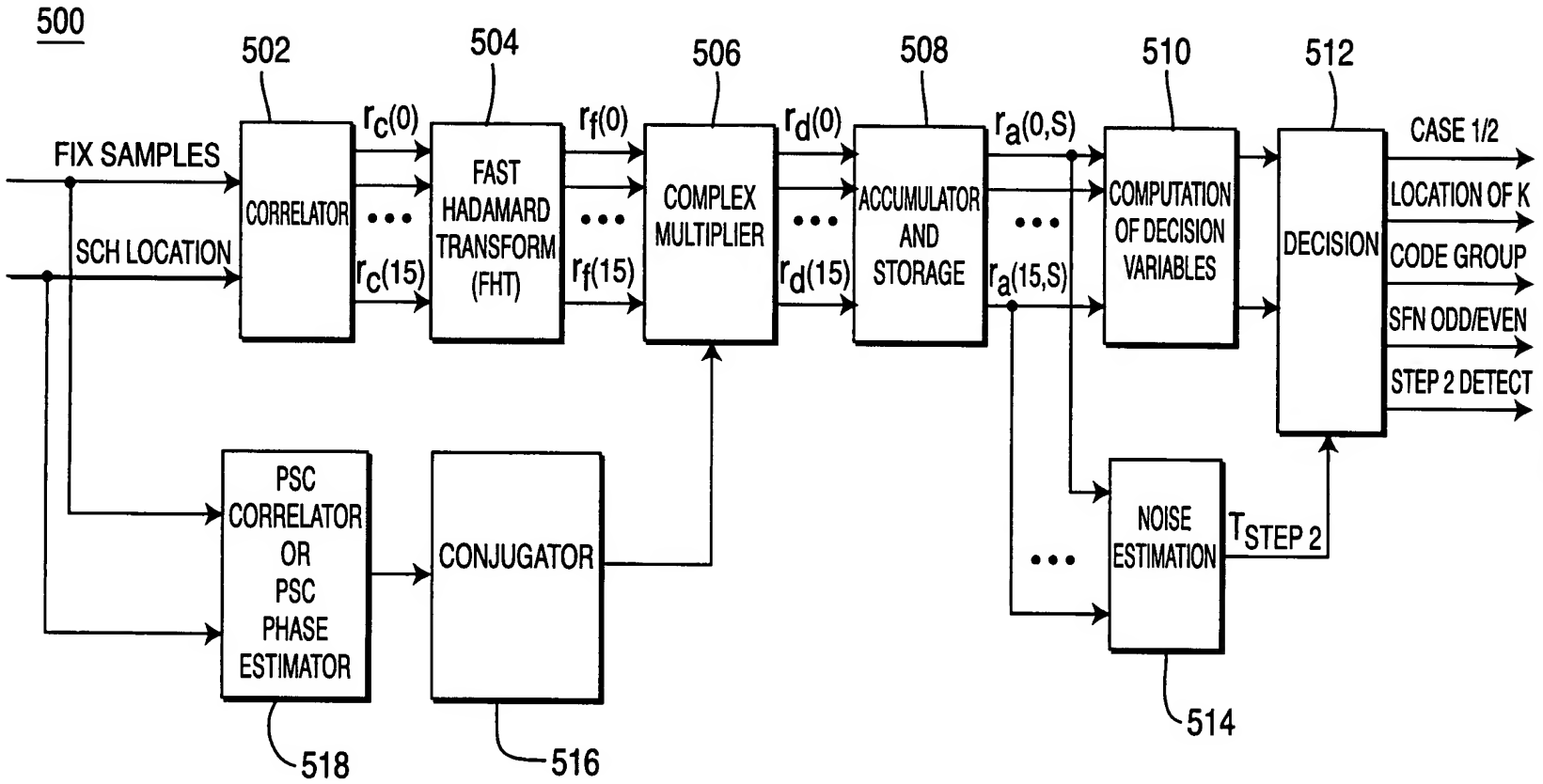

START ICS
302
INITIALIZE ALL STEPS
306
RUN STEP 1 FOR 4 FRAMES
308
DETECTION
NO
YES
316
• RUN AFC FOR (24) FRAMES
• RUN STEP 1 CONCURRENTLY AND UPDATE CHIP OFFSET EVERY 4 FRAMES IF THERE IS DETECTION
312
RUN STEP 2 OVER 8 FRAMES
318
DETECTION
NO
YES
322
RUN STEP 3 OVER 4 FRAMES
324
DETECTION
NO
328
RUN STEP 3 OVER 4 FRAMES
YES
326
END OF ICS
YES
330
DETECTION
NO
EXIT
320
332
IS THERE ANY GAIN SETTING LEFT?
NO
YES
334
SET AGC TO NEXT GAIN LEVEL

FIG. 4


400
404
406
408
410
412
ACCUMULATE N FRAMES
HGC
1-1
8 CHIP DELAY
38400 POINTS
416
420
Z=x/y
RATIO EVEN 38400 POINTS
EVEN
Xe
Ze
414
FRAME DELAY
EVEN SAMPLES
418
RX RRC FILTER
SPLITTER
NOISE THRESHOLD ESTIMATOR 19200 POINTS REPEAT TWICE
y
402
ODD SAMPLES
ACCUMULATE N FRAMES
Xo
Zo
ODD
422
DECISION
1. FIND THE MAXIMUM ENTRY AND CORRESPONDING INDEX AMONG RATIO EVEN AND RATIO ODD 2*38400 POINTS.
2. CHECK IF MAX IS BIGGER THAN THE THRESHOLD.
3. SET THRESHOLD FLAG TO 0 OR 1.
EVEN
ODD
STEP 1 FLAG
CHIP OFFSET
WHEREVER THE EVEN OR ODD ACCUMULATOR VALUES (X) ARE SMALLER THAN THE THRESHOLD VALUES (Y), THERE IS NO NEED TO DIVIDE, ZEROS CAN BE PUT AS THE RESULT OF THE DIVISION.



ACCUMULATOR STORAGE REQUIREMENTS

CASE 1: 6 CODES x WINDOW SIZE x 1 SLOT x 2 FRAMES

CASE 2: 12 CODES x WINDOW SIZE x 2 SLOT x 2 FRAMES

FIG. 5

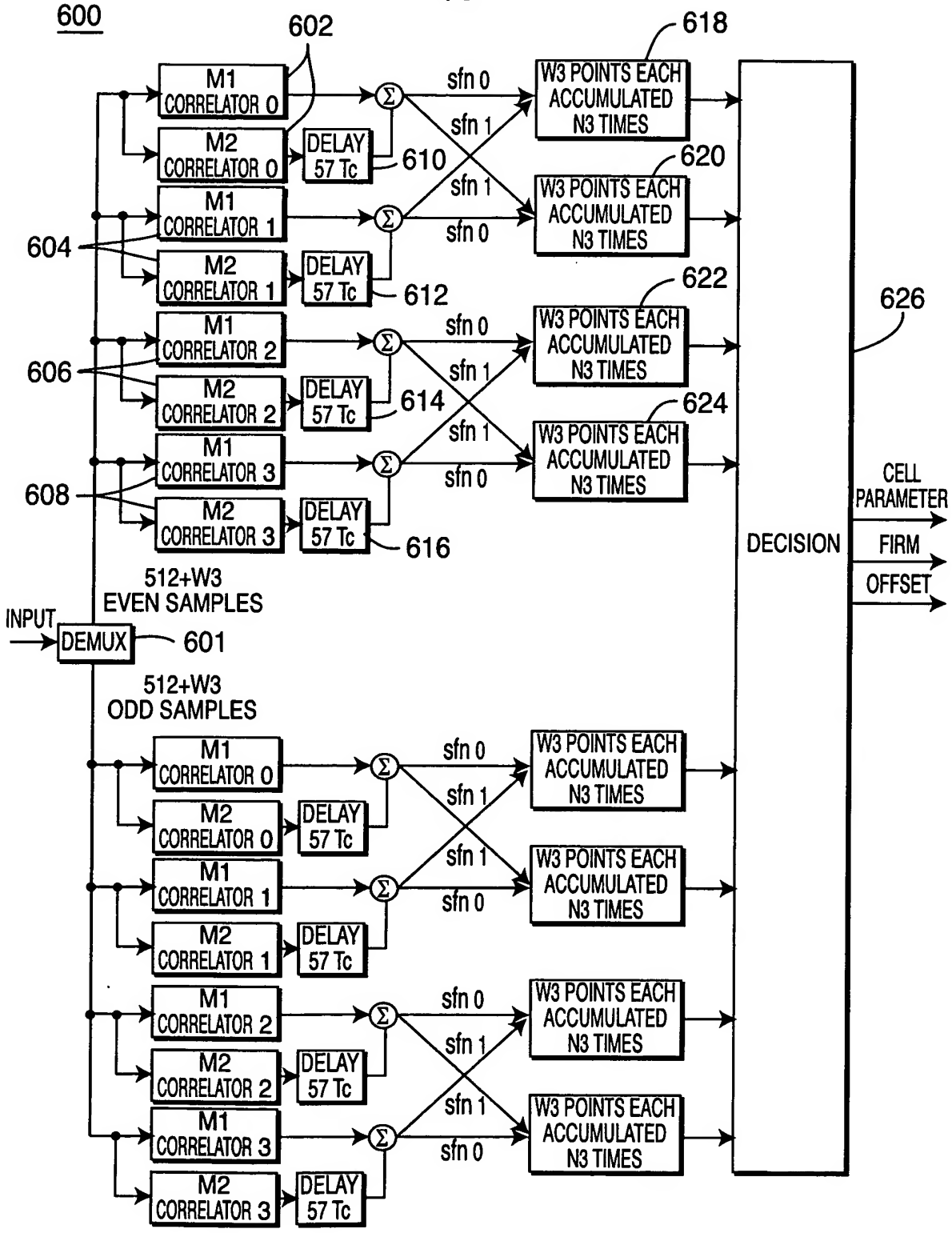

600
602
618
M1 CORRELATOR 0
M2 CORRELATOR 0
DELAY 57 Tc
610
sfn 0
sfn 1
W3 POINTS EACH ACCUMULATED N3 TIMES
620
M1 CORRELATOR 1
M2 CORRELATOR 1
612
604
622
626
M1 CORRELATOR 2
M2 CORRELATOR 2
614
606
624
M1 CORRELATOR 3
M2 CORRELATOR 3
616
608
DECISION
CELL PARAMETER
FIRM
OFFSET
512+W3 EVEN SAMPLES
INPUT
DEMUX
601
512+W3 ODD SAMPLES

FIG. 6